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ABSTRACT

Using data from the National Opinion Research Center's 1980 national survey, "High School and Beyond," relationships between an overall measure of ability and participation in performing arts activities were examined for 21,479 high school seniors from 1,015 public and private schools. A low positive relationship was found between participation and ability, a relationship that was similar for both males and females. A similar low relationship was found between participation and various demographic variables. Comparing statistics on participation in performing arts between males and females, the report stated that more females than males participate in chorus, dance, debate, and drama, and that participation between males and females is about the same in band and orchestra. (IM)

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Differences Among Ability Groups in Participation in the Performing Arts at the High School Level

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Abstract

Using the High School and Beyond data, relationships between an overall measure of ability and participation in performing arts activities were examined for high school seniors. Although the ability measure demonstrated a weak relationship to participation in debate or drama, it played only a small role in determining particiation. The demographic variables of school type, region of the country, and SES did not appear to be important factors in determining participation in performing arts activities. The low relationships between ability and participation in performing arts were similar for males and females. More females than males participated in chorus or dance and debate or drama, but similar numbers of both sexes participated in band or orchestra.

In an attempt to provide for the needs of all students and to assist students in all areas of development, the high school curricula includes instruction and activities in the performing arts. The importance of the arts is exemplified by The College Board's (1983) inclusion of the arts as a basic academic subject in which students preparing to go to college need knowledge and skills. Although students of all ranges of academic ability may participate, it would seem likely that students of higher intellectual ability participate more frequently than do students of either average or low ability.

Studies of the characteristics of gifted and talented students indicate that such students have a wide diversity of interests and great versatility (Newland, 1976). They also possess a high degree of emotional awareness and an unusual emotional depth and intensity (Clark, 1979). Such characteristics support the contention that high ability students may be more interested in participating in the performing arts.

In addition, it appears reasonable to expect that students are more likely to participate in the performing arts if they demonstrate a talent in the area. Recent definitions of giftedness indicate that individuals may demonstrate a talent or gift in more than one area (Marland, 1972) such as in general intellectual ability and in the performing arts. Although there are notable studies of the relationship between creativity and intelligence (Torrance, 1962; Getzels and Jackson, 1962), little attention has been given to the relationship between the performing arts and academic ability.

Clements et al. (1982) found that high school students who had intense and prolonged dramatic experiences had higher creativity test scores than less experienced counterparts. Moreover, the students who participated in the study as members of a teen drama program were better than average students in school and half of the students qualified for their high school gifted program.

A study by Knieter and Newman (1982) investigated the relationship between interest in music and a propensity for playing music and academic achievement. Their study found a significant relationship among grades, amount of education and occupational prestige, and the student's music propensity score.

The present study sought to examine the relationships between academic ability and participation in the performing arts at the high school level. The research questions were as follows:

1. Is ability level significantly related to participation in the performing arts?
2. Are selected demographic variables significantly related to participation in the performing arts?
3. Is ability level significantly related to participation in the performing arts when the variability due to demographic variables is held constant?
4. Are the answers to the first three questions the same for males and females?
5. Are there different rates of participation in the performing arts for males and females?

Method

Data Base

Data reported in the present study came from a survey known as High School and Beyond (HSB) that was conducted by the National Opinion Research Center in 1980. This large data base is a rich source of information that allows for analyses of questions involving youth and education. Data are available for 28,240 sophomores and 30,030 seniors on 638 variables from 1,015 public and private schools across the United States. A detailed description of the sample, sampling procedures, and tests can be found in other sources (Coleman, Hoffer, & Kilgore, 1982; NCES. 1982). Of the senior students that comprise the HSB data base, 21,479 were used for the present study. The 8,551 seniors not included had missing data for one or more of the variables incorporated in this investigation. Sophomores were not examined in this study.

Performing Arts Variables

The three questions that were used to obtain information were part of a larger survey that was administered to all the students in the HSB sample. The students responded to the following general question: "Have you participated in any of the following types of activities either in or out of school this year?" Three of the activities listed were, (1) debating or drama, (2) band or orchestra, and (3) chorus or dance. The students chose one of the following responses for each activity, (1) have not participated, (2) have participated actively (but not as a leader or officer), or (3) have participated as a leader or officer. For the purposes of the present study, choices 2 and 3 were combined to

form a dichotomy of those who did participate in the activity vs. those who did not participate.

Ability

The measure of ability used in the present study was really a combination of achievement tests and nonverbal ability tests. The term "ability" was used to describe the composite measure despite the fact that it was a combination of both achievement and ability tests. One could argue that "ability" is not the best descriptor, however, the purpose of combining both types of tests was to get a general measure of overall functioning. There were nine tests used to arrive at a general measure of overall functioning. The tests were, senior vocabulary parts 1 and 2, reading comprehension, math parts 1 and 2, mosaics parts 1 and 2, picture-number, and visualization in three dimensions. The vocabulary sections required the selection of a synonym for the target word from a list of 5 words. In the reading comprehension section, the task was to read short passages (aproximately 140 words per passage) and then answer several multiple-choice questions about information stated or implied in the passage. The math sections required knowledge of arithmetic and basic algebra. The task of the mosiac tests was to determine the location where two complex visual patterns differed. The picture-number test was basically a short-term memory task in which pictures of common objects were paired with two-digit numbers. After the student studied the pairings, they were then presented with only the common object and required to identify the correct numerical partner. Finally,

visualization in three dimensions presented the subject with a drawing of a flat piece of paper on the left. To the right were five objects, only one of which would be made by folding the flat piece of paper along its dotted lines. The subject's task was to visualize how the flat piece of paper would look when it was folded, and then select the finished object from the five choices. A further description of the tests can be found in an article by Page and Keith (1981).

The nine tests were submitted to a common factor analysis with varimax rotation and squared multiple correlations in the diagonal. The rotated factor loadings produced two factors. Factor scores were generated for every subject on each of the two factors. These two factor scores were used as the general ability measure.

Demographic Variables

Region. The region of the country that a student came from was used to assess influences on reading achievement. There were nine regions of the country identified: New England, middle Atlantic, south Atlantic, east south central, west south central, east north central, west north central, mountain, and Pacific. The students in each region were sampled appropriately according to their proportion to all students in the country. For the purpose of the analyses, each region was coded as a separate categorical variable with a 1 indicating membership in the region and a 0 otherwise.

School Type. The next demographic variable was the type of school in which the student was enrolled. The nine school types were, regular public, alternative schools, Cuban Hispanic public, other

Hispanic public, regular Catholic, Black Catholic, Cuban Hispanic Catholic, elite private, and other private schools. As with region, each school type was coded as a separate categorical variable with 1 indicating enrollment in a particular school and 0 otherwise.

Socioeconomic Status. The SES was a composite variable obtained by summing five standardized variables: father's occupation, father's education, mother's education, family income, and number of possessions (daily newspaper, encyclopedia, typewriter, electric dishwasher, 2 or more cars, more than 50 books, student's own room at home, and pocket calculator).

Analyses.

Differences in rates of participation in the performing arts for males and females were presented by cross-tabulation analyses. Multiple regression procedures were used in determining the relationships of ability and the demographic variables when predicting participation. First, ability (factor scores on the two factors) was examined in order to determine its efficiency in predicting participation in the performing arts. Second, the demographic variables of region, school type, and SES were tested to determine the amount of variance they could account for in participation. Third, the demographic variables were held constant in order to ascertain how much variability in participation could be accounted for by ability over and above the variability due to the demographic variables. The analyses were done for the total group and separately for males and females.

The emphasis in the interpretation of the results for the present

study is on the amount of variance accouted for in predicting participation in the performing arts. This approach was adopted since almost every very small difference was statistically significant due to the large sample size. Therefore, from the standpoint of making the interpretation of the results more meaningful, it is recommended that an R^2 exceed .02 (small effect size) in order to be considered as having any potential practical significance.

Results

The results of the cross-tabulation analyses are reported in Tables 1, 2, and 3. Table 1 gives the breakdown of participation in debate or drama by gender. The results of this analysis revealed that approximately 85% of the students did not participate in debate or drama. The relationship between gender and participation in debate or drama was ϕ = .06. This weak relationship demonstrated that males and females had similar rates of participation in debate or drama. Roughly 13% of the males participated in either of these activities while 17% of tne females did so.

Insert Tables 1 and 2 about here

Table 2 displays the breakdown of participation in band or orchestra by gender. The finding of this cross-tabulation demonstrated that approximately 86% of the students did not participate in band or orchestra. The relationship between gender and participation was ϕ = .02. Once again, this weak relationship revealed that males and females

had very similar rates of participation in band or orchestra. Approximately 14% of the males participated in either activity while 15% of the females participated.

Insert Table 3 about here

Table 3 presents the cross-tabulation of participation in dance or chorus by gender. The results of this analysis revealed that 79% of the students did not participate in dance or chorus. The relationship between gender and participation was $\phi = .20$. This was a low moderate relationship and indicated that females tended to participate in these activities more than males. About 12% of the males participated in either dance or chorus while 29% of the females participated.

Insert Table 4 about here

The results of the multiple regression analyses reported in Table 4 indicated that ability demonstrated only a very low relationship to participation in debate or drama for the total group ($R^2 = .021$), for males ($R^2 = .025$), and for females ($R^2 = .022$). The relationships between ability and particiation in band or orchestra, or dance or chorus, were for all practical purposes insignificant. Ability did not account for even 1% of the variability in participation for any of the groups.

The demographic variables of region, school type, and SES

accounted for only very small amounts of variance in participation in the performing arts. For the total group, the demographic variables accounted for about 1% of the variability in participation in debate or drama. For males, the demographic variables accounted for almost 2% of the variability in debate or drama. For females, the demographic variables account for almost 2% of the variability in particiation in band or orchestra. In the other performing arts activities for all groups, the demographic variables were able to account for less than 1% of the variability in whether or not students participated.

The preceding analyses indicated that ability was able to account for aproximately 2% of the variance in participation in debate or drama across all three groups. The results in Table 4 show that when the demographic variables were held constant, ability still accounted for close to 2% of the variance in participation in debate or drama.

Discussion

In terms of the number of males and females that participated in performing arts activities in high school, the HSB data for seniors indicated that more females participated in chorus or dance than males (29% vs. 12%). In addition, there was a slight tendency for females to be involved in debate or drama more often than males (17% vs. 13%). There apeared to be little difference in the participation in band or orchestra for females and males (15% vs. 14%).

The overall measure of ability demonstrated a low relationship to participation in debate or drama for both males and females and the total group. This result suggests that students with higher ability

levels tended to be involved with debate or drama more than lower ability students. This finding seems to be consistent with the verbal demands of debate and drama. These tasks typically require extensive use of abilities such as verbal reasoning, logical thinking, and verbal memory. The large verbal component in these activities would tend to enhance their relationship to and dependency on the overall ability level that was assessed through paper and pencil tasks. In subsequent analyses where demographic characteristics were held constant, the overall measure of ability was still related to participation in debate or drama. This finding suggests that regardless of the school type, region, or SES, higher ability students tended to participate in debate or drama more often than students with lower abilities.

The relationship of the demographic variables to participation in the performing arts for the total group was very low to almost non-existent. This was a rather surprising finding and suggested that school type, region, and SES exerted little influence on the levels of participation in performing arts activities. For males, there was a low relationship between participation in debate or drama and the demographic variables. For females, there was a low relationship between participation in band or orchestra and the demographic variables. While these relationships were statistically significant due to the large sample, they were very low. However, the findings did indicate that there was a low but consistent tendency for the demographic variables to be related to participation in debate or drama for males and participation in band or orchestra for females. The

purpose of the present study did not include attempting to untangle the influences of the separate demographic variables in predicting participation in performing arts activities.

In conclusion, the overall measure of ability demonstrated a weak relationship to participation in debate or drama. Although the finding suggested there was a statistically significant and consistent relationship between ability and participation in debate or drama, the low magnitude of the relationship indicated that ability played only a small role in determining participation; thus, many other factors are involved. The demographic variables of school type, region, and SES, however, did not appear to be important factors in determining participation in performing arts activities.

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Table 1

Crosstabulation of Gender by Participation in Debate or Drama

Frequency Row Percent Column Percent	Debate or Drama No	 Yes	
Male	8894 87.42 48.58	1280 12.58 40.37	10174 47.37
Female	9413 83.26 51.42	1892 16.74 59.65	11305 52.63
Total Percent	18307 85.23	3172 14.77	21479

Note. r = phi = .058
R^2 = .0034

Table 2

Crosstabulation of Gender by Participation in Band or Orchestra

Frequency Row Percent Column Percent	Band or Orchestra No	 Yes	
Male	8769 86.19 47.73	1405 13.81 45.22	10174 47.37
Female	9603 84.94 52.27	1702 15.06 54.78	11305 52.63
Total Percent	18372 85.53	3107 14.47	21479

Note. r = phi = .018
R^2 = .0003

Table 3

Crosstabulation of Gender by Participation in Chorus or Dance

Frequency Row Percent Column Percent	Chorus or Dance No	Yes	
Male	8911 87.59 52.65	1263 12.41 27.73	10174 47.37
Female	8014 70.89 47.35	3291 29.11 72.27	11305 52.63
Total Percent	16925 78.80	4554 21.20	21479

Note. r = phi = .204
R^2 = .0416

Table 4

R^2s for Predicting Participation in the Performing Arts from Ability and Selected Demographic Characteristics

	Ability	Ability and Demographics	Difference[1]	Demographics Only
	1	2	3	4
Total Group				
Debate or Drama	.0209	.0275	.0171	.0104
Band or Orchestra	.0060	.0179	.0091	.0088
Chorus or Dance	.0006	.0060	.0007	.0053
Males				
Debate or Drama	.0247	.0366	.0185	.0181
Band or Orchestra	.0064	.0137	.0096	.0041
Chorus or Dance	.0005	.0080	.0003	.0077
Females				
Debate or Drama	.0224	.0281	.0198	.0083
Band or Orchestra	.0075	.0269	.0089	.0180
Chorus or Dance	.0001	.0069	.0001	.0068

Note. [1]Table entry in this column is the squared semi-partial correlation derived from the R^2 in column 2 minus the R^2 in column 4. The squared semi-partial correlation represents the amount of variance attributed to ability independent of the effect of the demographic characteristics.